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ABSTRACT

This booklet is designed to facilitate open, clear communication between educational facility planners and the architects hired to oversee building design and construction. It provides a list of architectural, electrical, plumbing, and topographical symbols; a glossary of architectural terms; and a list of public agencies and relevant codes and regulations of which school planners ought to be aware. (CMD)

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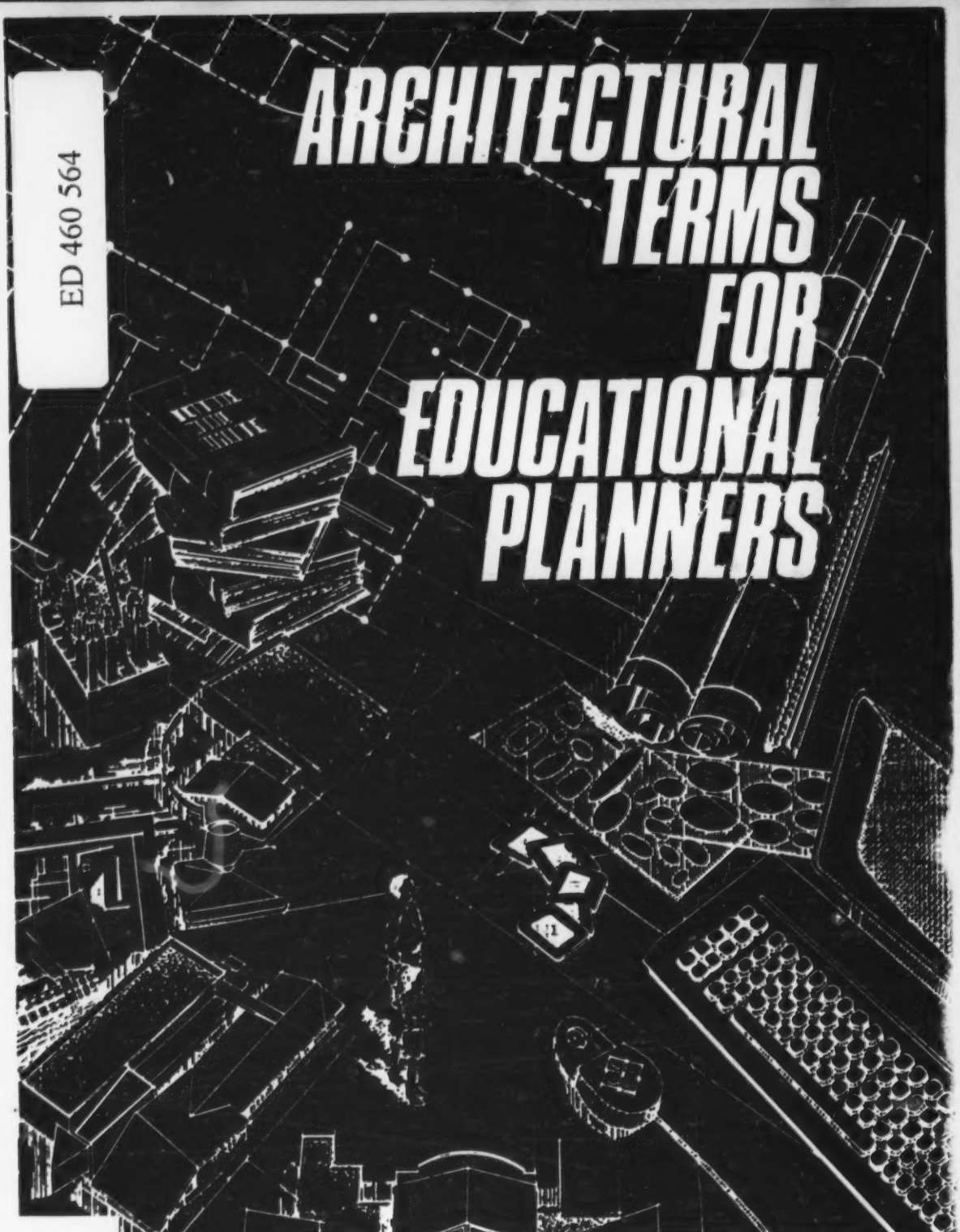
ARCHITECTURAL TERMS FOR EDUCATIONAL PLANNERS



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COMMUNICATION

A prerequisite to the design, development and delivery of a successful educational facility is the free-flow of communication between educator and architect. The architect's goal is to clearly understand the school district's philosophy, instructional program and unique space and design requirements.

Communication must be a two-way process, to be effective. To supplement the educator's knowledge of architecture, we offer a collection of terminology, symbols and general information related to the profession.

It is our desire that enhanced communication, combined with vision, creativity, innovation and professional dedication, will promote excellence in the learning and teaching environment.

W L C
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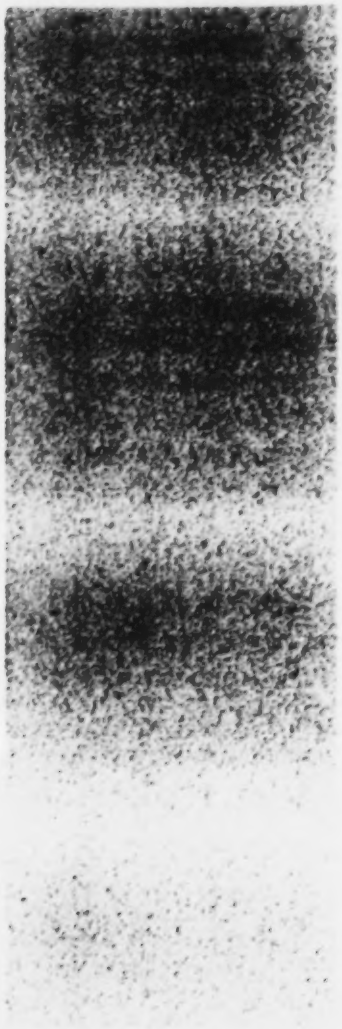
Architectural Services

Two kinds of services are offered by architects: Basic Services, as required in most projects, and Additional Services which may not be a part of a project.

I. Schematic (Preliminary) Design Phase



This is the first phase of the architect's basic services. In this phase, the architect consults with designated individuals from the school district to ascertain the requirements of the project. The architect prepares schematic design studies consisting of drawings and other documents illustrating the scale and relationship of the project components, for approval by the district. The architect also submits a preliminary statement of construction cost.

II. Design Development Phase

In the second phase of the architect's basic services, the architect uses the approved schematic design studies to prepare design development documents. These include drawings and other documents to fix and describe the size and character of the entire project as to structural, mechanical and electrical systems, materials and other essentials. The architect also submits to the district an updated preliminary estimate of construction costs.

III. Construction Document Phase

During the third phase of the architect's basic services, the architect prepares from the approved design development documents, for approval by the district, the working drawings, specifications and the necessary bidding information.

In this phase the architect also assists in the preparation of bidding forms, the conditions of the contract, and the form of agreement between the district and the contractor.

IV. Bidding or Negotiation Phase

In the fourth phase of the architect's basic services, competitive bids or negotiated proposals are sought as the basis for awarding a contract.

V. Construction Phase - Administration of the Construction Contract

The fifth and final phase of the architect's basic services includes the architect's general administration of the construction contract(s). This includes acting as the owner's representative during construction, making periodic visits to the site, and keeping the owner informed of progress of the work.

• Additional Services

An architect may also perform services beyond the Basic Services included in the five phases of architecture. Such services may include, but are not limited to, Energy Studies, Life Cycle Cost Analyses, Demolition, Master Planning, Economic Feasibility Studies, Space Programming, Model Building, Renderings, and preparation of Future Phase Drawings.

Review of Architectural Plans

Periodic and final plan review sessions involving school district representatives and the architect are essential to ensure that the facility meets the district's requirements and expectations.

A complete set of plans is organized in a standard sequential format, and could include any or all of the following sections.

	Series
• Title sheet(s) with project information	T
• Architectural/General information/Index of drawings	A - 0
• Civil	C
• Landscaping	L
• Architectural/Detail for individual buildings	A - 1
• Food Service/Kitchen	F or K
• Interior Design, Furniture	D
• Graphics (Signage) (Signage may be defined in Specs)	G
• Structural	S
• Plumbing	P
• Fire Protection/ Sprinkler System	F
• Mechanical/HVAC	M
• Electrical	E
• Swimming Pool	S.P.

Each page of a completed plan set will include the signature and certification of the responsible architect. In addition, special consultants' signatures and local agency signatures are required on specific plan pages.

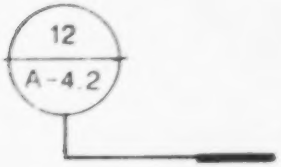
Typical Symbols*

Architectural Symbols

Building Section

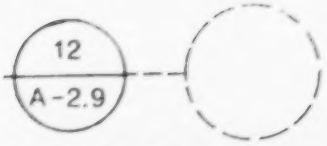
Direction of View
Section Identification Letter

Detail Section



Section Identification Number
Sheet on which Section Occurs

Detail Reference to Drawings



Detail Identification Number
Sheet on which Detail Occurs

* Symbols may vary slightly, depending upon the project and architectural firm.

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Accessory Identification (Restroom Accessory)

Accessory Number
Handicapped Where Noted

Door Identification

Number

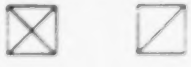
Window Identification

Letter

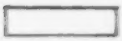
Match Line

Climate Control Symbols

Thermostat
Ceiling Duct Outlet



Electrical Symbols



Fluorescent Fixture

Incandescent Fixture

Telephone

Intercom

Outlets

Television Antenna Outlet

Plumbing Symbols

Floor Drain

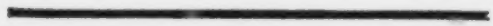
Hot Water

Topographical Symbols

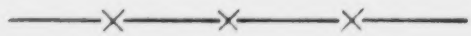
Cold Water

Gas Line

Sprinkler Line

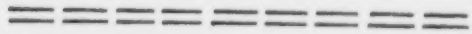


Waste Line

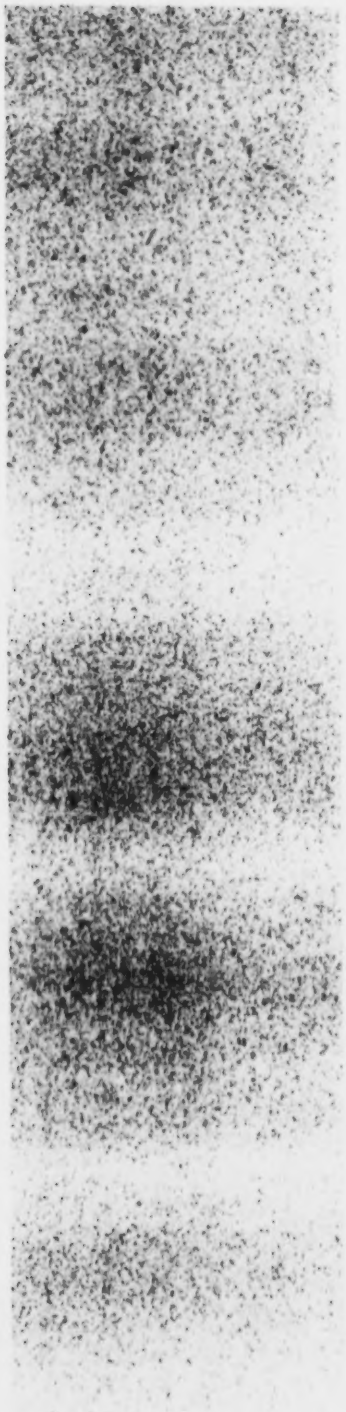


Fence

Paved Road



Unpaved Road



Power Line

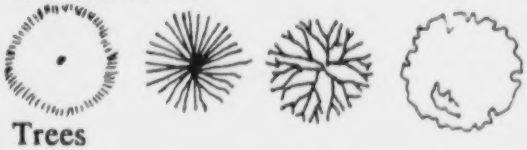
Water Line

Gas Line

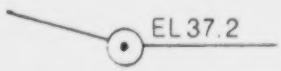
Sewer Line

Meridian Arrows (North Symbol)

Ground Cover



Trees



Property Corner

Property Line

Glossary of Architectural Terms

Acoustics	The total physical characteristics of a room (size, shape, absorption materials) which affect noise and sound level.
Addendum	A supplement to bidding documents, issued prior to submission of bids, for the purpose of clarifying, correcting or adding to the specifications previously issued.
AIA	Abbreviation for "American Institute of Architects." A professional association for architects, interns and those directly involved in the practice of architecture.
Architect	A person duly licensed to perform architectural services, including analysis of project requirements, creation and development of project design, preparation of drawings, specifications and bidding requirements, and general administration of the construction contract.
Architecture	The art and science of designing structures in keeping with aesthetic and functional criteria. Structures built in accordance with such principles are referred to as architecture.
Automatic Fire Extinguishing System	An approved system of devices and equipment which automatically detects a fire and discharges an approved fire-extinguishing agent onto or in the area of the fire.
Auxiliary Space	Space which supports the instructional space and accommodates out-of-classroom needs of staff and students. Examples are auditoriums, food preparation, service, and dining areas, faculty offices, administrative offices, guidance and career center and health office. (Referred to as core space.)

Azimuth Study

A visual sun and shade angle study demonstrating the movement of the sun from a fixed point; used by architects to determine optimal orientation of buildings or shading devices.

Bid Documents

Includes advertisement or invitation to bid, instructions to bidders, the bid form, and the proposed contract documents (plans and specifications), including any addenda issued prior to receipt of bids.

Boundary Survey

A survey of property establishing or re-establishing lengths and directions of boundary lines.

Building Code

A collection of rules and regulations adopted by authorities having appropriate jurisdiction to control the design and construction of buildings, alteration, repair, quality of materials, use and occupancy, and related factors of buildings within their jurisdiction; contains minimum architectural, structural, and mechanical standards for sanitation, public health, welfare, safety, and the provision of light and air.

Change Order

A written order to the contractor signed by the owner, contractor and the architect issued after the execution of the contract authorizing a change in the work or an adjustment in the contract sum or the contract time as originally defined by the contract documents: may add to, subtract from, or vary the scope of work.

Civil Engineer	A licensed engineer trained in the design of static structures such as buildings, roads, tunnels, and bridges and the control of waste and its contaminants.
Computer Aided Design (C.A.D.)	Use of the computer to perform drafting and design functions.
Construction Change Directive (Sometimes called a Field Order)	The C.C.D. signed by owner and architect, is a written authorization for the contractor to proceed on changes in the work which may involve a cost and/or time impact on the contract. The C.C.D. is used primarily to eliminate delays which result from lengthy negotiations over cost or time. When signed by the contractor, the C.C.D. can be converted to a Change Order.
Construction	All the on-site work done in building or altering structures, from land clearance through completion, including excavation, erection, and the assembly and installation of components and equipment.
Construction Cost	The cost of all construction portions of a project, generally based upon the sum of the construction contract(s) and other direct construction costs; does not include the compensation paid to the architect and consultants, the cost of the land, right-of-way, furniture and equipment, or other costs which are defined in the contract documents as being the responsibility of the owner.

Contractor	One who is licensed to undertake responsibility for the performance of construction work, including the provision of labor and materials, in accordance with plans and specifications and under a contract specifying cost and schedule for completion of the work.
Contract Administration	The management by the architect of all facets of contracts to assure that the contractor's total performance is in accordance with his contractual commitments and that the obligations of the owner are fulfilled.
Contract Documents	Those documents that comprise a contract, e.g., in a construction contract, the owner-contractor agreement, conditions of the contract (general, supplementary, and other conditions), plans and/or drawings, specifications, all addenda, modifications, and changes.
Date of Substantial Completion	The date certified by the architect when the work or a designated portion of the work is sufficiently complete, in accordance with the contract documents, so that the owner may occupy the substantially complete area for its intended use.
Design	The architectural concept of a building as represented by plans, elevations, renderings, and other drawings.
Demountable Partition, Relocatable Partition	A non-load-bearing partition of dry construction, assembled from prefabricated components, which can be installed, removed, and then reinstalled at a different location; may be full height, from floor to ceiling, or partial height.

Design Specification	A purchase specification delineating the essential characteristics that an item bid must possess to be considered for award and so detailed as to describe how the product is to be manufactured; generic specification.
Detail	A minor section of an architectural design or concept. A drawing, at a larger scale, of a part of another drawing, indicating in detail the design, location, composition, and correlation of the elements and materials shown.
Dry-Wall Construction	Interior wall covering other than plaster, usually referred to as gypsum board surfacing.
Easement	The right to use land owned by another or the right to prohibit the owner from making a particular use of the land. Examples: streets, underground or overhead utility easements, pedestrian, animal, or vehicular rights-of-way.
Educational Specifications	A written document from the school district which provides the architect with definitive information concerning educational activities which the proposed facility must support, and the types of spaces which will best accommodate program requirements.
Electrical Engineer	A licensed engineer trained and experienced in the design of electrical systems.
Elevation	A drawing showing the vertical elements of a building, either exterior or interior.

F & E	Abbreviation for Furniture and Equipment.
Fabrication	Work done on parts of a structure at the factory before delivery to the building site.
Field Order	See Construction Change Directive.
Foundation (Footing)	Any part of the structure that serves to transmit the structure's load to the earth.
General Conditions	That part of the construction contract documents which sets forth many of the rights, responsibilities, and relationships of the parties involved.
General Contractor	The licensed prime contractor who is responsible for coordination of all contract work at the construction site, including that performed by the subcontractors.
Gradient	The degree of slant of a surface, often expressed as a percentage.
Grading Plan	A plan which shows the proposed finish of the ground surface of a given site, usually by means of contours and grade elevations.
HVAC	Abbreviation for "heating, ventilating, and air conditioning."
Inspector (Building Inspector)	A person employed by the owner or agency with jurisdiction to inspect construction, to determine if it conforms to both the requirements of the building codes and the approved construction documents. (Required on public school projects.)

Insulation	Materials for obstructing the passage of sound, heat or cold from one space to another.
Landscape Architect	A licensed person trained and experienced in the design and development of landscapes, plantings, irrigation, recreation areas, streets and walkways.
Masonry (Steel reinforced)	Stone, brick, concrete, hollow tile, concrete blocks or similar building units bonded together with mortar to form a wall, pier, buttress, or similar mass, which is reinforced with steel bars.
Masonry Veneer	A nonstructural masonry facing of brick, concrete, stone, or tile bonded against a wall. Masonry veneer is applied for ornamentation, protection or insulation.
Mechanical Engineer	A licensed engineer trained and experienced in the specialized area of the use of power and machines which utilize the power, such as heating, ventilating and air conditioning systems.
Model	An architectural model is a 3-dimensional image or constructed replica of a project or building which can be viewed from all sides.
Notice of Completion	Notice filed and recorded with the County, upon final completion of the project, which certifies that all work has been completed. This official notice triggers the final timeline during which a lien on the project may be filed.

Notice to Bidders	A notice contained in the bidding requirements informing prospective bidders of the opportunity to submit bids on a project, and setting forth bid procedures.
Notice to Proceed	Written communication issued by the owner to the contractor authorizing the contractor to proceed with the work and establishing the date of commencement of the work.
Orientation	Position of a building on a lot in relation to the sun, wind, view and noise.
Owner-Architect Agreement	A contract between the architect and client for professional services.
Passive Solar Heating	Involves capturing, storing, and using solar radiation to heat an area without the use of fans or pumps to circulate the heat.
Pedestrian Circulation	A system allowing for a smooth and functional flow of pedestrians in and around a building area.
Performance Bond	A bond of the contract guaranteeing to the owner that the work will be performed in accordance with the contract documents. May be combined with the labor and material payment bond.
Perspective Drawing	A drawing of a project as it would appear in 3 dimensions.

Platform	A raised area within a building used for presentation of music, plays, other entertainment, lectures, or similar purposes without overhead hanging curtains, scenery drops or stage effects other than lighting.
Plat	A map of an area showing boundaries of lots and other pieces of property.
Plenum System	A heating or air conditioning system in which the air is forced through a chamber connected to distribution ducts.
Post Occupancy Evaluation	The process of evaluating a completed facility through systematic compiling of quantifiable data gathered from facility users concerning technical, functional and operational elements.
Precast Concrete	A plain reinforced concrete unit which is cast in other than its final position in the structure.
Program	A statement prepared by the owner and architect for the owner setting forth the conditions and objectives for a building project including its general purpose and detailed requirements, such as rooms required, sizes and special facilities.
Progress Schedule	A written schedule or graph showing proposed and actual times of starting and completion of the various elements of the work.
Project Manual	The manual prepared by the architect for a project, including the bidding requirements, conditions of the contract and technical specifications.

Proscenium Wall	A wall which separates the stage or platform from the auditorium.
Punch List	A list of items of work to be completed or corrected by the contractor. Usually compiled when the project is substantially complete.
Rendering	The art of shading or coloring an architectural drawing, using pencil, ink, water color, colored markers, tempera or a combination of techniques.
Section Drawing or Model	A representative drawing or model of a building shown as if it were cut vertically, to show the interior.
Shop Drawings	Drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data prepared by the contractor or any subcontractor, manufacturer, supplier, or distributor, which illustrate how specific portions of the work shall be fabricated and/or installed.
Site Plan	A plan of a construction site showing the position and dimensions of the building to be erected and the dimensions and contours of the lot.
Soils Engineer	A licensed engineer trained in the examination, investigation, and testing of the subsoil and surface of a site to obtain complete information and recommendations necessary for the design of foundations, structures and paving.

Spatial Relationships	The interrelationship of one activity to another in a proposed facility, which can be summarized in a matrix or bubble type diagram.
Spatial Requirements	A summary which specifies net square footage (which is usable for specific purposes) plus other square footage (required for circulation, walls and mechanical services) to define the total gross square footage within which the architect will define the project.
Specifications	A written document describing in detail the scope of work, materials, method of installation, and quality of workmanship for work to be placed under contract.
Stage	A partially enclosed area with retractable curtains within a building used for the purpose of entertainment.
Standard	Characteristics for an item that, for reasons of quality level, compatibility with other products, etc., is generally accepted by the manufacturers and users of that item as a required characteristic for all items of the sort.
Structural Engineer	A licensed civil engineer with expertise in the design and construction of structures to withstand physical forces or displacements without danger of collapse or without loss of serviceability or function.
Subcontractor	A person or organization who has a direct contract with a prime contractor to perform a portion of the work at the site.

Surveyor	A person licensed and trained in civil engineering who develops description and maps defining the specific space, position and topography of a piece of land.
Topographic Survey	The configuration of a surface, usually shown on a drawing, which shows its relief and the locations of its natural and man-made features. Contour lines indicate height below or above a fixed datum.
Vehicular Circulation	A system providing for safe and efficient entrance and egress of vehicles to designated areas of the site through design of driveways, parkways and parking areas.
Working Drawings	Drawings, intended for use by a contractor, subcontractor, or fabricator which form part of the contract documents for a building project; contain the necessary information to manufacture or erect an object or structure.

Public Agencies

Reference	Responsibility
• **Office of Local Assistance (OLA) as staff for the State Allocation Board (SAB).**	Implements State School Building Program and assists district in procedures for eligibility and funding.
• **Office of the State Architect (OSA/SSS) (OSA/ACS)**	Reviews plans for structural safety, and access compliance.
• **State Department of Education**	Reviews site and school plans to ensure adequacy for instructional program.
• **State Fire Marshal (SFM)**	Reviews plans for adequate fire protection, exiting fire hydrants and fire access roads.
• **Local Board of Education of School District**	Provides Educational Specifications for project; approves State Application, design, cost estimates, bids, change orders and Notice of Completion.
• **Local City or County**	Approves grading, vehicle access, and street/sidewalk improvement plan.
• **Local Utility Service Providers**	Provides information and defines requirements concerning utility services to project.
• **Local Fire Department**	Provides recommendation concerning fire protection features such as fire access roads and fire hydrants.

Codes and Regulations

Reference	Responsibility
• California Code of Regulation (CCR) (formerly California Administrative Code). CCR includes Title 21-24.	Laws pertinent to all California public buildings.
• Education Code (EC)	Laws related to school sites, school facilities, and school district qualification for school construction funding.
• Access Compliance (ACS) Standards	Access and parking for handicapped individuals.
• Uniform Building Code (UBC)	Code of minimum standards for all construction.
• California State Fire Marshal Construction Materials Listing.	Contains construction materials, fire retardant materials, fire resistive designs, and fire protection equipment that conforms to the California State Fire Marshal's building standards and fire regulations.